A Comparative Analysis of Selected International Forestry Certification Schemes

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BRITISH COLUMBIA

PREFACE

I am pleased to present *A Comparative Analysis of Selected International Forestry Certification Schemes*. This document was written by Peter Wood during his internship with the Ministry of Employment and Investment (Trade and Sustainable Development Group) between May 1999 and March 2000 under my supervision

The report attempts to analyze the various sustainable forestry certification standards (and draft standards) that have emerged in the last few years. It describes how they were developed, differentiating qualities and structures, and most importantly, how different regions have interpreted the same common sustainable forestry principles and elaborated them into indicators.

There are a couple of important caveats that must be kept in mind while reading this report:

- the various schemes chosen represent a SAMPLE of MANY national and international schemes, and the regional examples of FSC standards and drafts are but a fraction of the total number underway.
- as the world of forestry certification is dynamic and rapidly evolving, many of the facts represented here are necessarily temporal, and may soon become inaccurate as new drafts come out. However, this report provides a good comparison of the standards as of April 2000.

Such comparative work may assist in providing an international frame of reference as the regional standards for British Columbia are developed in the coming year.

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Suggestions and comments on sustainable forest management practices are encouraged and appreciated.

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BRITISH COLUMBIA

A COMPARATIVE ANALYSIS OF SELECTED INTERNATIONAL FORESTRY CERTIFICATION SCHEMES

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April 2000

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1. Executive Summary

This report examines 8 certification standards from a variety of regions and certification systems. Five of these standards are under the Forestry Stewardship Council's scheme (Sweden, United Kingdom, USA-Pacific Northwest, Great Lakes/ St. Lawrence, and Maritimes), and a comparison is presented on how each of these regions has interpreted selected criteria from the FSC International's 10 Principles. An overview is presented for each of these, and in addition three other internationally significant forestry certification systems are examined: Finland's Forest Certification System, Pan European Forest Certification, and the American Forest and Paper Associations Sustainable Forestry Initiative.

It is found that although there are many commonalties between these standards, there are also discrepancies and inconsistencies between regions that may amount to an uneven playing field in the realm of international trade. Throughout the document, the current draft of the BC FSC regional standard is examined in light of the trans-jurisdictional comparisons. Four completed FSC certifications from the USA and Sweden (done by Smartwood, SGS and SCS) are examined to provide insight into how certification works in practice.

This report may be of use to forest managers, operational applications, certifiers, and of general interest to anyone in the forest sector.

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2. INTRODUCTION

In the past decade, dozens of forestry certification schemes have been developed around the world. Although they have been adapted to apply to a diverse range of biophysical and socioeconomic contexts, they contain common categories of concern. The international trend towards independent certification emphasizes the need to ensure that while being regionally adapted to suit the local context, the standards maintain trans-jurisdictional consistency in terms of how onerous a standard it is to meet. In this manner it is ensured that a particular label of approval means the same thing the world over, increasing stakeholder and consumer confidence in the system.

This report intends to highlight differences between these various standards. Examined here are a variety of established standards and draft standards in the process of development, as well as actual completed certifications.

First of all, an overview of each standard will be given, including a brief description of the process of its development, structure, and highlights. It should be noted that this was by no means an exhaustive exercise; to compare every regional standard would be impractical. Instead, presented here are 8 standards of particular relevance and importance to British Columbia at this time. There are two "tiers", or ways of delineating the certifications examined. First, there are five FSC-based standards (***Sweden, UKWAS, USA- Pacific Northwest, Great Lakes/ St. Lawrence, Maritimes***) and three non-FSC systems (***Finland's Forest Certification System, Pan European Forest Certification, American Forest and Paper Associations Sustainable Forestry Initiative***). Second, there are those which have been completed and approved (***the Swedish and United Kingdom FSC standards, the FFCS, AFPA SFI, PEFC***[1]).

Next, four actual certifications will be examined. These represent a small sampling of completed certifications, and are not necessarily representative of all. However, each certification examined here is of particular relevance to the British Colombian context. The certification of Randy Jacobszoon Consultants (California - Smartwood) will be looked at as an example of a resource-manger certification. Menominee Tribal Enterprises (Wisconsin - Smartwood) will be looked at as a First Nations-managed certified forest. The Pennsylvania Department of Conservation and Natural Resources certification by SCS will be looked at as an example of how certification can work on publicly owned lands. Finally, an AssiDoman certification done in Sweden by SGS will be examined to see how certification has worked against an approved FSC standard.

Finally, the FSC-based certifications will be compared by topic: environmental, aboriginal and socioeconomic. To compare these standards on every sub-criteria, although potentially desirable, is beyond the scope of this report (this has been done for BC, Sweden, GLSL and Maritimes in matrix format, available in Appendix A). Instead, they will be compared on the basis of selected criteria of particular interest to British Columbia.

[1] Partially completed; the infrastructure or "umbrella" system of recognition is in place.

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3. COMPARISON BY COUNTRY/ REGION

3.1 Sweden - FSC

PROCESS OF DEVELOPMENT

The Swedish FSC standard was the first regional standard to achieve FSC-International approval. Initiated in February of 1996, the Working Group that developed the standard consisted of 15 voting positions held by various organizations, representing an assortment of stakeholder interests, and a chair (a member of government). Progress on the standard was soon halted when the group Sodra (representing small landowners) withdrew from the process, claiming it favoured larger firms. They resumed soon after, but without the participation of this sector of industry. The standard was approved in June of 1997.

OVERVIEW

The Swedish standard is structured differently than FSC International's ten principles. It delineates the principles into *Basic*, *Social*, *Montane Forest, Environment and Biodiversity*, and *Economic* requirements. In general, the Swedish standards seem to be much more succinct than other regionally developed draft standards. They take a more simplified approach, allowing a greater degree of freedom in their interpretation and application. This standard does not develop the core FSC Principles into as many sub-principles as other draft regional standards have.

For example, the three sub principles that compose Principle 2: Tenure and Use Rights and Responsibilities have been condensed into one brief paragraph. Most other draft standards have taken the opposite direction; developing these sub-principles into up to 15 specific criteria (as is the case with the BC document). This brevity may simply reflect the fact that most of the forested lands in question are privately owned and managed, making this issue very simple. Regardless, in amalgamating FSC International's three sub-principles, they have omitted the requirement that *"local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with* ***free and informed consent***".

Of special interest is the complete absence of the monitoring requirement, Principle 8, which has figured prominently in other draft regional standards. The closest the standard comes to mentioning monitoring is section 7.2.9, which stipulates that "the condition of the forest, its development and the quality of measures carried out shall be *followed up*". This departs significantly from even the basic FSC International Principle, which outlines five specific sub-principles including specific monitoring/ assessment requirements, documentation and information dissemination, and incorporation of results obtained into an adaptive management plan.

Often a particular criteria will be defined as a target or a management objective, without prescribing fixed and quantifiable indicators. For example, sub-principle 5.2 (optimal use and local processing requirement) simply states that "felling should make the best use of wood value, and wastage should be avoided". Some more recent draft regional standards have prescribed specific measurable targets of how much value is to be achieved per volume of wood.

The standard appears to have a relatively strong emphasis on the social aspect; it places firm requirements on the company to provide "*long-term and secure*"(p 4.1.1)

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employment. It also stipulates that the enterprise is responsible for "the *prevention* of physical, mental and social ill-health"(p.4.1.3). Although the standard does not elaborate on the specifics of how they are to accomplish this, or establish evaluative indicators for this criteria, it is a fairly unique interpretation of the FSC's Principle 4. It is also emphasized that the outdoor environment not be given priority at the expense of the working environment (4.1.3). However, this standard side-steps the issue of providing employment specifically for the local community (FSC Criteria 4.1). In applying the Swedish FSC standard in an actual certification, SGS has included this requirement, stating that "employment policy neither favours nor discriminates against locals".

In terms of environmental and biodiversity standards, however, the Swedish standard is much more streamlined. There is no specific mention of an environmental impact assessment being conducted prior to the operation (FSC Criteria 6.1). In terms of protecting rare, threatened or endangered species, the Swedish standard has chosen to interpret that as considering only red-listed species, instead of both yellow and blue-listed as well. Even then, it only requires that "proper consideration" be given to areas inhabited by these species, without prescribing safeguards or protected areas as required by the FSC International principles. Another example is the interpretation of the requirement to provide representative protected areas- most regional standards have stipulated a much higher requirement than the 5% that Sweden requires. In addition, certifiers such as SGS have interpreted this number as a "target" in applying this standard.

The Swedish standard has also taken a significantly different approach to Principle 3: Indigenous Peoples Rights. The indigenous people of Sweden are known as the Sami, whose traditional use of the land includes reindeer husbandry. The Swedish addressed specific issues relating to the indigenous Sami villages, whereas other standards have taken a much-more broad-stroked approach to indigenous issues. They identify specific regions of special importance, especially lands used in traditional reindeer husbandry, which are well-established and easily identified. Instead of upholding the FSC requirement to require "*free and informed consent*" of the indigenous people while operating in these areas, the Swedish standard merely requires that the forest owner "gives consideration" to their needs; what this consists of is open to individual interpretation. It appears that the onus is on the Sami people to alert the landowner of areas of special indigenous interest, as opposed to the other way around. There is no mention of compensation for the use of traditional ecological knowledge (P. 3.4).

Similarly, in the interpretation of Principle 9: High Conservation Value Forests, the Swedish standard has identified specific regions that fall under this category, instead of establishing general criteria that could be used to evaluate any particular forest for HCVF attributes. However, it should be noted that under P. 6.5.5, the standard outlines specific attributes that make individual trees of high biodiversity (and thus high conservation) value.

3.2 UK Woodland Assurance Scheme (UKWAS)

PROCESS OF DEVELOPMENT

The groundwork for the development of the UKWAS began in September 1997, when the UK Forestry Commission brought together representatives from a number of interests, including environmental, forestry, the 1995+ Buyer's Group, and representatives from the timber trade/ industry, as well as from the FSC. In January 1998, Prime Minister Tony Blair launched the UK Forestry Standard. In February 1998, leading reps decided to form an Audit Protocol, which was to enable independent certification to proceed on the

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basis of the UK forestry standard. The UK Woodland Assurance Scheme was subsequently developed to bring together this and the FSC standard for Great Britain, which had been approved in November 1998. The UKWAS was endorsed by the UK FSC in October 1999; this was significant in that this was the first scheme approved by FSC International whose process of development had not been exclusively owned and managed by the FSC. However, the FSC stipulated that in order to carry the FSC logo, a landowner must have an FSC-accredited certifier (currently only SCS and the Soil Association) do the audit. By November 1999 the UK Forestry Commission had its forests certified under the UKWAS, representing over 800,000 ha.

STRUCTURE

This standard does not follow the FSC's ten principles and associated criteria, opting instead to use the following structure:

UKWAS

1. Compliance with Laws/ certification standard
2. Management Planning
3. Forest Design
4. Operations
5. Protection and Maintenance
6. Biodiversity Conservation
7. Community
8. Workforce

The UK FSC developed a cross reference table in order to facilitate comparison between the two standards; noting where the UKWAS requires additional attention or monitoring in order to be compatible with the FSC UK. The standard is formed in three columns:

- **Requirements**: compulsory minimums to be complied with
- **Means of Verification**: suggests types of objective evidence that could be used to prove compliance with the requirement ("not exclusive or exhaustive"; can seek certification in other ways)
- **Guidance notes**: to help both the manager and the auditor in on-the-ground application: examples and elaboration. Not mandatory.

The UKWAS allows for resource manager (an individual or a company managing one or more woodlands or forests on the owner's behalf) and group certification (several owners being certified as a unit), which caters to the small owners (over 30,000 in the UK). It distinguishes between small (< 100ha) medium (between 100 and 1000 ha) and large properties; many of the criteria given are size-specific. The UKWAS may be used in conjunction with ISO 14000.

Under the audit scheme, a "major non-conformance" will normally preclude certification, while a minor non-conformance" must be rectified with in a given time period to maintain certification. It states that if a requirement is not appropriate for an enterprise, or not physically possible, it may be adapted so that it is "equally or more effective in meeting the intended objectives".

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GENERAL OVERVIEW

The UKWAS standard is very similar in terms of length and prescriptiveness compared to other regional standards. It is 30 pages long (plus appendixes), and the wording of most of its criteria is consistent with others such as that of the Maritimes and GLSL (in terms of using the words "shall" versus "should", e.t.c.). However, there are some issues which the UKWAS has developed differently.

For example, this standard has taken a unique approach in interpreting Principle 3 (consultation of indigenous peoples). It has taken this to mean "the local people" surrounding the woodland. This is significantly more inclusive than other standards, which limits the definition to a specific group of indigenous people. However, there is no explicit mention of obtaining "free and informed consent" (P. 2.2, 3.1) from locals; all that is required is that "adequate consultation" has been pursued and that locals and relevant organizations have been "made aware of" the operation. In addition, compensation for application of traditional knowledge (P. 3.4) and compensation for loss or damage of legal or customary use rights (P. 4.5) have been omitted. UKWAS has allowed traditional use rights to be constrained in situations where this interferes with management objectives; FSC UK notes that their standard only allows these rights to be limited when it threatens the integrity of the forest.

Often the UKWAS employs flexible wording in its criteria, allowing for "professional judgment as to the acceptability of the flexibility". For example, it states that biodegradable lubricants are to be used "where practicable", and that local seed is to be used "where appropriate and possible". In terms of social criteria, examples include the requirement that "reasonable provisions" have been given for encouragement of local employment, and there is evidence that the enterprise encourages and promotes the diversification of the local economy. It is noted that owners of small woodlands who live on or adjacent to their woodlands are automatically considered to meet this criteria.

In other sections, while the initial criteria given is firm, the guidance section makes exceptions. For example, in terms of defining sustained yield (2.2), it states that "harvesting and restocking plans do not jeopardize the long term productive potential of the woodland forest" but later recognizes that "in some circumstances the harvest level will exceed the increment".

Issues such as tenure and commitment are dealt with in a very simple manner due to the land ownership situation in the UK. Ownership can be demonstrated "by title deeds or solicitor's letter or long term unchallenged use", and they have declared their intention to protect and maintain the ecological integrity of the woodland forest in the long term. For small owners this only requires a signed declaration of commitment, for large owners this requires a public statement of policy.

In terms of the environmental impact assessment required under UKWAS, little is required beyond the existing governmental regulations, where one has been requested by the Forestry Commission, small woodlands are exempt from this. There is no mention of benchmarks against which to measure environment quality. There are specific requirements listed for minimum area to be managed primarily for biodiversity conservation (15%) and minimum area to be retained in the long term (1%).

Overall, however, the major variable that will determine how difficult a standard this is to meet lies in the degree to which the certifier uses and enforces the Means of Verification

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and Guidance notes. Although these offer a lot of detail and describe how one *can* meet a given criteria, these are non-mandatory.

3.3 FSC- Pacific Northwest Draft

PROCESS OF DEVELOPMENT

The Pacific Northwest FSC process was initiated by regional FSC members from Washington, Oregon and California in October of 1995. The Pacific Forest Trust, an NGO based in California, was used to facilitate early standards development. Several major revisions were made over the next four years, receiving input from over 100 participants as well as regional experts. In December of 1998 Working Group facilitation was transferred to Nick Brown (currently Manager for Forest Conservation- WWF USA). The most recent draft (3.01) was issued on February 1, 2000 and is currently undergoing review.

STRUCTURE

The standard follows the FSC International Structure fairly closely; no criteria have been omitted or amalgamated, and at around 30 pages is comparable in length to other North American FSC Standards. Sub-criteria developed regionally are differentiated from the FSC International's core criteria in that they are printed in bold type. There are extensive appendices covering issues such as:

- relevant First Nations treaties and related documents
- a list of existing certification standards for forestry in the region (including those of certifiers such as SCS, Smartwood and Silva)
- a look at how old growth should be defined and evaluated
- an ecosystem classification appendix, including the regional status of each
- a glossary building upon that of the FSC International, and elaborating on how the term "plantations" (as it applies to Principle 10) should be interpreted in the Pacific Northwest.

In the introduction, the standard establishes that the use of the phrases "shall", "should" and "are encouraged to" is used to establish the relative importance of the criteria. While the use of "shall" may preclude certification if the criteria is not met, not meeting a "should" criteria may allow a company to not comply given that there is a compelling reason for why the requirement is not met. "Are encouraged to" indicates a desirable practice, but will be reviewed with the greatest deal of flexibility.

GENERAL OVERVIEW

This standard, on the whole, represents a fairly straightforward interpretation of the FSC Internationals core principles and criteria. In some instances, these criteria have even been left verbatim, without being expanded into regionally specific indicators. However, there are specific areas that have been given heavy emphasis, and subsequently have been elaborated into very prescriptive requirements.

The most obvious example of this can be found in Criteria 6.3 (maintenance of ecological function). The current PNW FSC draft has retained the criteria and contents of the ***original*** Principle **9** (prior to the January 1999 revision by FSC International) which focused on the maintenance of primary or old growth forests, into criteria **6.3**. The PNW Working Group rationalized this by stating that the results achieved under the old P.9 were critical to forest management in the region, and had been painstakingly negotiated by Working Group participants.

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In Section 6.3, the standard delineates definitions for the classification of primary and late successional forests (Types 1 to 4), with a moratorium placed on Type 1 (*primary stands of at least 20 contiguous acres*) except for those on American Indian Lands. This concession is given *"in recognition of their sovereignty and unique ownership"*, adding that this will require special consultation between certifying teams and the affected tribe or nation. Logging is permitted in the other three land types, albeit with significant additional conservation considerations. There is a heavy emphasis on maintaining or restoring habitat continuity; it even goes so far as to suggest that old roads and dams in the area that prevent salmon migration be decommissioned (6.5.e).

The new Principle 9 has also been included, although each criteria has not been developed into indicators, leaving it essentially at the FSC International's wording. They have, however, elaborated on the definition of HCVF as it applies in the Pacific Northwest in the preamble to the criteria, and provide an appendix (D) listing applicable forest types.

The level of prescriptiveness given in determining the presence of HCVF in this draft appears to undermine the spirit of criteria 9.1. That is, allowing the applicant to determine the presence of attributes consistent with HCVF, and manage accordingly. Similarly, although they state that classification of a forest as HCVF ***may or may not*** preclude active management of the forest, the "moratorium" imposed under section 6.3 essentially does this, regardless.

The standard goes on to list very specific requirements for retention of dead vegetation, in both standing snags and organic debris. For example, it requires that 10 tons of woody debris per acre, and 4 to 12 large downed trees of a certain size per acre, distributed spatially by size and decay class, are left on site after harvesting (noting that specific targets will vary by region). Three pages (a total of 15 indicators) elaborate on three additional, "special" criteria which have been added. They are specific to regeneration methods, management in natural/ well-developed secondary forests, and the retention of living trees[2].

However, for many of the principles a great deal of freedom is given in interpreting and applying the criteria and indicators. For example, in describing what long term commitment to the FSC is required, it states that "forest managers shall provide *adequate* assurances to the certifier that they will continue to follow their management plans *over time*". What constitutes *adequate* and an appropriate time frame are left up to the certifiers discretion.

Similarly, in the development of the social and economic sections, the authors have frequently chosen to use the less onerous wording "are encouraged to" or "should" as opposed to the mandatory "shall". For example, P.4.1: "forest managers ...are *encouraged to* hire local workers for *as long as possible*". Additionally, in respect to local processing requirements (5.2), it states that forest managers are *encouraged* to pursue this "where *feasible*".

In many of the criteria, after an indicator is stated, it is further qualified with a remark such as " required where technically or financially viable" or "technical and financial constraints are given consideration"; this provides for pragmatic judgment to be applied at the site level. There is frequent mention of indicators being evaluated in consideration of the scale of the operation; for example, in regards to monitoring (8.2.b), it states that

[2] These special criteria were deleted from the most recent draft (Feb 1), because of lack of consensus, but are still receiving consideration by the working group

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"technical and financial constraints to data collection may be taken into consideration in applying this provision, particularly on smaller ownership".

Finally, this standard has developed an additional section on non-timber forest products (NTFPs) which is not present in other regional standards or drafts. Aside from adhering to the 10 FSC principles, the applicant must meet requirements such as providing harvesting guidelines specific to each NTFP, taking into consideration local, scientific and indigenous knowledge, and compensating indigenous and local communities for the use of their name or image in marketing.

The Pacific Coast Working Group which formulated these standards has agreed to maintain its structure after submitting them to FSC International (which they hope to do soon, following the current feedback process), and to oversee 2 years of testing and evaluation. They have also proposed to develop a "social stakeholder outreach program", to secure greater community involvement and participation in the future.

The PCWG is facing challenges in reaching consensus over post-harvest within-stand retention requirements, but hope to resolve this at an upcoming meeting in Fort Bragg in March 2000.

3.4 Great Lakes/St. Lawrence Regional FSC Draft Standard

PROCESS OF DEVELOPMENT

In April 1997, stakeholders with an interest in certification were consulted and a meeting was held at Parry Sound to select a Technical Advisory group for the FSC-GLSL region. Later that year at a workshop in Haliburton, stakeholders were identified and an eight person Steering committee was elected. They met around once a month for the next six months. They issued a draft of the standard in May 1998 and allowed for a public review. The steering committee reviewed the feedback and amended the standard; stakeholders were then issued a copy of the changes made. A two day workshop with the Maritimes FSC group took place soon after in an attempt to harmonize the draft standards. In March field testing was conducted by Smartwood and SCS, and in December 1999 another draft was issued.

STRUCTURE

The structure and length of the GLSL draft is very similar to the PNW and Maritimes drafts; although the whole document is almost 80 pages, the actual standards themselves are less than a third of that. For the most part, the standard follows the FSC international's Principle-criteria-sub-criteria-indicator format. Occasionally the draft diverges from this format; this is acknowledged in the introduction, and this is justified "in order to facilitate a more logical flow". For most sub-criteria, the indicators given are listed as suggested "examples", while in Principle 6 these are described as "mandatory performance indicators". They have chosen to describe methods of conserving biodiversity under either a "fine filter" or "coarse filter" approach. The draft has a well-developed set of appendixes, including details on Natural Disturbance Types and frequencies, applicable legislation, acts and internationally binding agreements. There is also an extensive appendix on aboriginal treaties and First Nations contacts applicable to the region.

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GENERAL OVERVIEW

The content of this document is fairly consistent with other North American drafts. In fact, a harmonization report between (the May 1998 draft) and the Maritimes draft revealed very few major differences. Many of the differences which were identified have since been incorporated in the Post-Field testing draft. However, on certain issues such as pesticides, herbicides and GMOs, the GLSL draft makes allowances for some circumstances that the Maritimes draft does not, such as for controlling invasive exotic species.

In terms of prescriptiveness, in several instances (for example, 6.5a: stand damage, 6.5b. rutting landings and hauling requirements) the GLSL standard outlines specific, measurable indicators that must be achieved. However, on many other sub-criteria the choice of phrasing is not as strong, and most of the indicators are only cited as examples. For example, in Criteria 3.2 it states that aboriginal peoples should be *"offered participation"* and that their cooperation is *"desirable"*. It is unclear the extent to which these "example indicators" will be taken into consideration.

3.5 Maritimes/ Acadian Regional FSC Draft Standard

PROCESS OF DEVELOPMENT

In April 1996 local stakeholders attended a meeting in Truro, Nova Scotia, and selected an FSC-Maritimes Technical Standards Writing Committee (TSWC). The first draft was released to the public for feedback in November of 1997. After four months of revision, the second draft was released via the internet. In June of 1998 a new Steering Committee was created (half of whom had been on the TSWC). In July of that year the Steering Committee submitted the draft to FSC Canada; it was declined approval, saying that consensus must be achieved first, and include broader stakeholder involvement, particularly from the forestry industry. Concerns of harmonization with adjacent regions were also expressed.

The Nova Scotia Ministry of Natural Resources wrote a letter of objection to FSC International concerning the lack of transparency and accountability. Overall, there has been an ongoing dispute over the integrity of the standard development process. In December 1999 FSC International granted approval of the standard, and appended particular conditions, recommending a rewording of the controversial biocide criteria as well as an improvement in process. JD Irving, a major industry chamber stakeholder, withdrew from the Maritimes FSC in protest.

Of interest is that the FSC-Maritimes performed a harmonization analysis with the Great Lakes/ St. Lawrence and Northeast USA draft standards as part of the process, responding to concerns over establishing a level bar across adjacent regions. In both cases the recommendation was made that the other standards harmonize "up" to that of the Maritimes. There is an ongoing controversy over the development of this standard, particularly concerning the use of biocides and pesticides.

STRUCTURE

This standard essentially follows the basic FSC International format (10 Principles, set sub criteria, elaborated with indicators). It is roughly 29 pages plus appendices, as well as a well-developed glossary and an extensive definition of protected area categories. It

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takes the approach of labeling certain criteria as potential "fatal flaws", whereby failure to achieve this criteria would preclude certification. Similarly, if an applicant failed to meet a criteria labeled as a "major problem", it would have to be remedied within a reasonable period of time to maintain certified status.

GENERAL OVERVIEW

Overall, this standard has taken a fairly straight-forward interpretation of FSC International's 10 core principles; in approach, length and indicator detail it is fairly consistent with other North American regional drafts such as that of Great Lakes/ St. Lawrence. However, there are specific issues which have been dealt with more restrictively; for example, the use of chemical fertilizers, biocides and genetically modified organisms is prohibited.

There is a heavy emphasis on public access to information obtained in forestry planning and monitoring. Consistent with other North American drafts, the wording of the majority of the indicators simply states that there is evidence that a certain criteria had been met, allowing for a great degree of interpretation by the individual applicant.

For example, under the clause of obtaining "free and informed consent" from First Nations (Criteria 2.2), the standard stipulates that "there is evidence" that this has been obtained, without prescribing what this constitutes. Similarly, the frequent use of such adjectives as "adequate" "sufficient" and "substantive" to describe efforts to meet a criteria allows for a good measure of interpretation. However, on certain issues, the standard takes a strong-worded approach; for example,: "old growth stands must not be harvested" (*P.6.2: protection of rare species and their habitats*).

Although this standard has been approved by FSC International with conditions, there are significant issues, such as the use of pesticides and biocides, which remain outstanding and may preclude widespread endorsement and participation from the forest industry.

3.6 Finland- Finnish Forestry Certification System

PROCESS OF DEVELOPMENT

The Forest Certification Standard Working Group was initiated in 1996 with 29 members representing an array of interests, with the goal of drafting local standards consistent with the FSC's Principles, ISO 14001, and the EUs EMAS.

In 1997 a proposal for certification standard guidelines was drafted, and later on that year three FFCS pilot projects were established. Due to internal conflict, ENGOs pulled out of negotiations later that year, but the FFCS continued with a 9-member steering committee.

The government played a prominent role in the development of these standards; the new forestry and conservation legislation introduced in January 1997 forms an important part of the standard, and the chairman of the certifications standards working group was from the Finnish Ministry of Agriculture and Forests. The FFCS was submitted for PEFC approval in November 1999.

STRUCTURE

There are over 650,000 private small-scale forest owners in Finland; this system was

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developed with this in mind. The FFCS is composed of 8 documents, with the third being the actual certification criteria (see Fig 3.6.1 below). The criteria are delineated for three different levels. There are 37 criteria listed for group certification at the *Forestry Centre* level. If this cannot be accomplished, an application can be made for group certification at the spatially smaller Forest Management Association level (14 + 23 criteria). Failing this, individual forest holdings can apply to be certified against 23 criteria.

On first impression, these criteria do not appear to be organized in any systematic format; the first consists of 37 individual criteria, not organized according in any particular order (e.g., environmental, social, economic criteria). The standard does not develop these criteria into sub-criteria as other standards (such as the FSC) have done. However, in Section 4 and 5, audit guidelines for certification are outlined for each criterion, designed to facilitate preparation for, and consistent implementation of the audits. A definition and description of the criteria is stated, indicators listed, and sources of information to consult suggested. It states whether it requires a document-based or performance-based evaluation, the level of monitoring required, and if the information acquired is to be made public. It should be noted that these are only guidance documents and are not binding like the actual criteria themselves.

Figure 3.6.1 FFCS Structure

1. Vocabulary
2. Application of group certification
3. Certification criteria
4. **Audit guidelines for certification at the Regional Forestry Centre level**
5. **Audit guidelines for certification at the Forest Management Association level**
6. Chain of Custody- material flow accounting method
7. Chain of Custody - verification of segregation method
8. Requirements for auditors and certification bodies

GENERAL OVERVIEW

This standard focuses on fairly basic forestry principles, and concentrates on the environmental and biological impacts of operations. Compared to standards such as the FSC, there is less development overall in terms of criteria surrounding social and indigenous people's issues. In general, the FFCS does not enter into very specific, measurable thresholds (with a few exceptions, to be discussed in Section 4). The criteria seem to place a heavy emphasis on "targets" as opposed to minimum/ maximum enforceable limits. The criteria also tend to shy away from strong wording, opting instead for more flexible and interpretable terms (e.g., site preparation is done "as light as possible", "attention is paid to multiple forest use").

There is an obvious influence from economic interests. For example, the standard has requirements such as conducting an "evaluation of the economic effects of preserving forest biodiversity". It also contains some requirements such as increasing the use of prescribed burning and biological control, and setting a maximum, instead of minimum, amount of protected area (5%). There are also very specific requirements for the protection of peat bogs; this issue is also raised in Sweden's FSC Standard.

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Overall, the level of prescriptiveness lies in the degree to which an auditor takes into consideration the audit guidelines in Section 4 and 5; although they are not binding they do describe fairly specific attributes and indicators to observe.

3.7 Pan European Forest Certification (PEFC)

PROCESS OF DEVELOPMENT

The PEFC was initiated in August 1998 by Finnish, German, French, Norwegian, Austrian and Swedish forest owners. Their goal was to create an internationally recognized "umbrella" framework to facilitate mutual recognition of various certification schemes. In addition to forest owners and players from the forest industry, governments were actively involved. The standard is largely based on the outcomes of the Helsinki and Lisbon Ministerial Conferences of 1995 and 1998.

Seventeen national PEFC governing bodies are either established or are in the process of development. In April 1999 a coalition of European environmental organizations announced that they did not support the PEFC, citing that it only represented a forest industry viewpoint. The PEFC council was officially launched in Paris on June 30 1999.

STRUCTURE

The PEFC has taken the six core principles established at the Helsinki conference (PEFC Annex 2) and developed them into 27 "quantitative and descriptive indicators"(Annex 3). These indicators are intended to be further elaborated and adopted at regional, national or sub-national level, a process to be initiated by forest owners. It is stated that although consensus is the *objective* in developing these criteria, it is not necessarily a precondition to their adoption. Extensive examples of potential elaborations on these indicators are given directly after the criteria. The PEFC also offers voluntary Operational Guidelines to facilitate implementation, and the Chain of Custody and Logo Usage guides are currently under development. The standard accommodates regional, group, and individual forest holding certification.

Format of the PEFC Standard:

CRITERION

- **CONCEPT AREA**
  - **QUANTITATIVE INDICATOR** (binding, set by PEFC)
    - **DESCRIPTIVE INDICATOR** (developed on a regional basis; although examples are given after the criteria, these are non-binding). General format:
      - legal/ regulatory framework
      - institutional framework
      - economic policy framework/ financial instruments
      - informational means to implement policy framework

GENERAL OVERIEW

Although the greatest detail offered by this standard falls within the "descriptive indicators" section, it would be misleading to evaluate the standard based on these as they are merely examples and are non-binding. One can only speculate at how these descriptive indicators will be interpreted and elaborated upon at the regional level. The PEFC stresses the importance of differentiating between the development of these

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certification criteria and the process of certification itself; they should be applicable to any forest operator in the region.

Many of the indicators have a heavy emphasis on rates of *change*; as in "change in total volume of growing stock", "change in age structure", "change in nutrients and pH levels". In this sense, the indicators are establishing what a criteria is to be measured by, not what that measurement itself should be. There is very little offered in terms of firm, measurable, criteria. In terms of prescriptiveness, the standard does not go into great detail, allowing this to be interpreted at the regional level.

The standard goes into areas not covered by other standards such as the FSC; higher level policy issues such as "enhancing the use of forest products for energy (1.3), or "supporting non-discriminatory trade practices" and providing support to improving technology. In this sense the standard attempts to go beyond evaluating a company's commitment to a particular forested area; but evaluates its commitment to forestry as an industry in general. Furthermore, under Criterion 6, "Maintenance of Other Socio-Economic Functions and Conditions" it mentions such indicators relating to what share of the GDP is derived from the forest sector, and what opportunities are given to the public to participate in public policy formation. Here the standard goes well beyond what is within the power of any individual company's control, and addresses government-level policy issues.

The only national standard thus far to be submitted to be approved by the PEFC is Finland's FFCS.

3.8 American Forest and Paper Association: Sustainable Forestry Initiative (SFI)

This program was developed in 1996 by professional foresters, conservationists and scientists chosen by the American Forest and Paper Association, a national trade association for the forest, paper and wood products industry. Conforming with the SFI is a condition of being a member of the AF&PA. Its members own approximately 90% of company-owned forested land in the US.

The AF&PA describes their SFI program as a "comprehensive system of principles, objectives and performance measures that integrates the perpetual growing and harvesting of trees with the protection of natural attributes". The five general guiding Principles are:

1. Sustainable Forestry
2. Responsible Practices
3. Forest Health and Productivity
4. Protecting Special Sites
5. Continuous Improvement

These are expressed in 12 Objectives, and for each Objective, there are 2 or 3 Performance Measures against which these are evaluated. In the document "Voluntary Verification Indicators" (AF&PA 2003), the SFI outlines examples of specifics that could be used to evaluate a program participants ability to meet a Performance Measure; there are approximately 10 of these for each one intended to provide metrics for evaluating compliance.

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Figure 3.8.1: Structure of the AF&PA's SFI Program

Principles: 5
- **Objectives**: 12 **total**
  - **Performance Measures**: 2-3 **per** Objective, 32 total (adaptable)
    - **Verification Indicators:** ~10 **per** Performance Measure (examples only)

The SFI explains that the standard is written in the future tense *"to reflect the underlying premise of ...continuous improvement"*. They also permit the Performance Measures to be adapted at various levels (site, state, regional), given that they meet or exceed the "*spirit and intent*" of the objectives.

There is an eighteen-member Independent Expert Panel which reviews the implementation of the SFI program on an annual basis. Members of the panel may, but are not required to, observe on-the-ground practices and individual company data. The program also includes a Voluntary Verification component, allowing the individual applicant to decide whether to choose third party or self-verification.

There exists a high degree of freedom in how the applicant decides to meet each objective and, prescriptiveness is kept to a minimum. The typical performance measure follows the following format: "Each Program Participant will define its own policies programs and plans to implement and achieve ***X objective***."

In terms of environmental standards, the AF&PA takes a different approach than do other standards such as the FSC. First of all, there is an emphasis is on improving forest productivity. In contrast to other certification systems which emphasize ecosystem (and Natural Disturbance Type) based harvesting, one of the SFIs main objectives (2.3) is to protect forests from natural disturbances such as fires, pests and disease outbreaks, maximizing yield.

Also instead of restricting the use of Genetically Modified Organisms, the use of these is listed as an appropriate method by which a participant can meet reforestation requirements. In terms of using substances such as biocides and herbicides, the SFI states that Program Participants shall "continue the prudent use of forest chemicals to improve forest health and growth while protecting employees, neighbors, the public and sensitive areas..." The SFI also places an emphasis on protecting water quality (Objective 3), and insists that Participants meet or exceed the EPA's Best Management Practices.
There is also an emphasis on funding (for riparian zone, wildlife research etc.) not found in other certification schemes.

The SFI limits the *average* size of clearcuts to 120 acres. However, this does not necessarily limit the individual size of any one clearcut. This average is not applicable when it is necessary to respond to forest health emergencies, such as fire and pest outbreaks. There is a stipulation that previously cut blocks must be restocked with trees at least three years old or five feet high before adjacent areas can be clearcut.

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There is minimal requirements in regards to social and community standards, and there is no mention of consideration of indigenous people. Land tenure is not addressed, most likely reflecting the fact that most program participants operate on company-owned land.

There is comparatively very little requirements for public consultation; the emphasis being on public education and outreach. Where consultation is mentioned, it is only in regards to how the Program Participant is meeting the SFI standard, not in regards to the standard itself. The Participants are to establish a national forum (of loggers, landowners, industry reps) whereby they meet twice annually to review progress toward the AF&PA SFI. The results from these meetings are not necessarily made public. Reporting is done to the Forest Resources Board of Directors.

The AF & PA's SFI has yet to win significant backing from environmental groups as it is perceived as an industry-based standard. Conforming with the SFI is a condition of being a member of the AF&PA; so far 15 members have been expelled for non-compliance. To date, over 22 million hectares have been certified under this scheme.

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4. COMPLETED CERTIFICATIONS

Presented here are four actual certifications done under the Forest Stewardship Council system. They are but a small sample of completed certifications, to give a flavour of how certification is applied in practice. This also reflects, to a certain extent, the relatively limited availability of publicly released certifications. However, each certification examined here is of particular relevance to the British Colombian context. The certification of Randy Jacobszoon Consultants (California - Smartwood) will be looked at as an example of a resource-manger certification. Menominee Tribal Enterprises (Wisconsin - Smartwood) will be looked at as a First Nations-managed certified forest. The Pennsylvania Department of Conservation and Natural Resources certification by SCS will be looked at as an example of how certification can work on publicly owned lands. Finally, an AssiDoman certification done in Sweden by SGS will be examined to see how certification has worked against an approved FSC standard.

4.1 Randy Jacobszoon (Smartwood)

Randy Jacobszoon Forestry (JFC) was assessed as a Resource Manager (RM) by Smartwood over four days in June 1997. JFC had been in operation for 2 years at that time, managing 3778 acres on behalf of 10 landowners in the Redwood California area, extracting an average total of around 3 million board feet of sawlogs annually. Smartwood granted JFC RM certification on September 15 1997, and issued the public summary the following January. (At ten pages long, it is similar in length to other Smartwood certification summaries). The certification contained 16 conditions, most to be met within 1 year, and 20 non-mandatory recommendations.

Smartwood notes that the region in which JFC operates has been heavily logged (the majority of all old growth removed prior to 1950), with neighboring lands being dominated by industrial forestry operations. As such, small owners such as JFC have little influence on what happens at the larger landscape level. It also notes in the introduction that although California has extensive forest regulations, they are "bureaucratic in nature", with poor agency oversight and unable to protect the environment.

Despite this, there is frequent reference to these regulations, often citing compliance with them as adequate to satisfy Smartwood requirements. For example, the summary lists Watershed Management as one of JFCs strengths, stating that all of his clients operations perform impact analysis as required under state law. In contrast, under one of its recommendations, the summary says that California Fish and Game is not a reliable source of information in regards to the endangered species act (ECA).

Particular emphasis has been given in this certification to the JFCs management plan. While it states that the plan combined with JFCs stewardship ethic demonstrates a long term commitment to sustainable forest management (and lists this under "Strengths") it also lists the management plan as a Weakness, and many of the 16 conditions to be met within the first year are derived from this. Although it recognizes that JFC is "in sync verbally" with the landowners he manages for, Smartwood expressed concern that JFCs plans do not reflect the landowners "true management goals and on the ground practices". There is no plans on desired forest structure and composition, no projection of future conditions, and detail on aquatic and riparian habitat is described as "anecdotal".

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There is no mention of First Nations or traditional users of the forest, or consultation of either except that "several camps and lithic scatters" had been discovered by the staff of the JFC, and that the level of protection granted to these sites meets or exceeds state standards. California's Forest Practices Act also requires that landowners within 300 feet of the property must be notified, and an announcement be placed in the local paper to notify the public of the "impending harvest". The public can then obtain a copy of the management plan from the California Department of Forestry, and they are given thirty days to comment or contest the operation.

4.2 Menominee Tribal Enterprises (Smartwood - Wisconsin)

Menominee Tribal Enterprises (MTE) manages 220,000 acres of productive forested land on the Menominee tribal reserve in Wisconsin. The forested area that MTE manages is composed of mainly hardwood species with high diversity, extracting approximately 20 million board feet per year. In 1992 they became the first forestry operation in North America to supply certified forestry products (assessed by SCS). The field assessment which is described here was performed by Smartwood (SW) and SCS in June of 1994 over 2.5 days, using the 1994 draft of the Lakes States Regional Guidelines for Assessing Natural Forest Management as well as SW and SCS protocols. The certification was granted in April 1995, and the public summary in May 1997.

The Menominee are known to have lived in the region for more than 1000 years, and have actively managed the forest since 1850. MTEs forest management underwent a major change in 1973, when their Indian Tribe Status was reinstated, and an agreement was signed to manage their forests for sustained yield in conjunction with the Department of the Interior. They developed a Continual Forest Inventory (CFI) system, to be updated every 12-15 years. A management plan was designed with a 25-year timeline, to be updated every ten years, based on a Forest Habitat Classification System (FHCS) they developed. However, there was no requirement for long term commitment to be declared to any one particular system of certification.

Overall, the assessment was very favourable, commending the tribes record of consistently extracting a large volume of wood since 1850, while the standing volume has steadily increased. This track record of sustained yield was cited as MTEs proof of "long term management" capability. It was also noted that the managed forest appeared to have a "natural" and undisturbed appearance.

There are two aspects of this certification that are noteworthy. First is their assessment of their use of pesticides and chemicals. In the assessment, it states that the operation is heavily dependent on these, and that moving away from the use of chemicals would result in a strong negative economic impact for MTE, and would result in a marked change in forest composition. The assessment states that MTE did a ""commendable job" in preparing an Environmental Assessment for pesticide application. However, the team also felt that *any* use of chemical pesticide for silviculture, regardless of justification, raised concerns over long term sustainability.

The second issue is that of green retention and the establishment of natural reserves. In the assessment, it states that there are no reserves, as the Native American ethos does not recognize the separation of people from nature, and that since the surrounding landscape is comparatively denuded, the MTE managed forest forms a *de facto* reserve in itself. It adds that the region already has adequate ecosystem reserves (it is adjacent to the Ottawa and Nicolet National Forests).

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The certification was granted with four conditions to be met within the first year, and five to be met within three years. A revision of the company's existing chemical use policy was one of the first-year conditions, requiring that MTE state that their objective is to minimize chemical use developing non-chemical alternatives. In the re-assessment 14 months later (January 1997), a new written Pesticide Use Policy document was provided by MTE expressing a "strong desire to move away from chemical treatments"; this was deemed adequate to meet the condition.

The lack of established ecosystem reserves was addressed in one of the three-year conditions; a further evaluation for the need for these reserves was requested, including the locations of threatened or endangered species. MTE was given the option of not designating any ecosystem reserves, granted they substantiate their rational in the annual certification report. In the re-assessment, MTE provided "well-formed arguments" to this end, and subsequently was exempted from the reserve requirement. The reasoning was based on land use history, conservation biology and cultural traditions of the tribe.

All other conditions were met and technical recommendations followed, and MTE maintained its certified status.

4.3 Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry (SCS)

This certification covers all 20 districts of Pennsylvania s State Forests, over 485 000 ha, amounting to almost a third of the FSC-certified forest area in the USA. The majority of the forests are between 80 and 100 years old, primarily hardwood. In the introduction it notes that this assessment "does not constitute a critique of government policy".

The assessment was conducted in two phases. Phase I was initiated in January 1997, and covered 1.2 million acres in 6 districts. The second phase, covering the remaining 14 districts, was initiated in January 1998. Both phases included management document reviews, a field assessment, stakeholder consultation, and a peer review.

This certification does not follow the standard FSC International format; SCS uses its own Forest Conservation Program (FCP) criteria, delineating these under three broad sections (described below). At over 200 pages long, it is a very thorough and detailed assessment. Before giving the evaluation, the assessment describes each of the criteria and examples of indicators of compliance/ non-compliance. SCS uses a numerical scoring system in its evaluation (1-100, 100 being the highest), with relative weighting assigned to each criteria.

For example, "harvest regulation" received a weighting of 0.37 (out of 1), while "harvest efficiency" received the lowest weighting at 0.06. A total score of 80 or higher had to be achieved within each of the three "primary elements" to achieve certification. The DCNR results were as follows:

1. TIMBER RESOURCE SUSTAINABILITY: 85
2. FOREST ECOSYSTEM MAINTENANCE: 83
3. FINANCIAL AND SOCIOECONOMIC: 92

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The certification resulted in 9 conditions and 27 non-compulsory recommendations. Overall, SCS rates the DCNR's forest management very high, describing it as a "model for progressive forest management unparalleled in the region", also noting their "exceptionally strong" socioeconomic performance.

The most notable aspect of this certification is the frequent emphasis given to the impact that the persistent overabundance of white tailed deer have had on this management unit, "dominating and limiting" silviculture. While SCS acknowledged that this type of pest management is not the explicit jurisdiction of the DCNR, they pointed out that this was a pivotal issue for forestry in this state, and therefore better coordination with the Department of Game Management was required. Another recommendation was to improve public access to forested land, to increase hunting pressure.

Other issues that raised concern (and consequently conditions) include the fact that their management plan was outdated, that there was a lack of strategic planning in regards to harvesting and ecosystem reserve location, and the lack of a system to evaluate monitoring compliance. Finally, there was serious concerns that "the most fundamental of all forestry decisions", how much wood to harvest, was not the responsibility of any individual or group within the bureau being assessed.

Some of the FSC standards do not appear in this certification, or appear in a slightly moderated format. For example, there is no reference to Principle 1 (adherence to laws and FSC P&C). While the "adherence to laws" criteria may be deemed inapplicable since it is the regulator applying for certification, the fact that there was not even a verbal commitment to FSC represents a departure from most other certifications.

There is also no mention of consideration of aboriginal interests. This is most likely due to the fact that there are no native land claims that would "cast doubt" on the State's title, and consequently makes the "free and informed consent" requirement irrelevant. There is, however, a very thorough assessment of the social and economic role that the states forestry operations play, including an evaluation of total number employed by forestry operations, average wage, economic impact of recreation, and financial stability.

Of interest is that throughout the document, there were several references to why government was conducive to certification. For example, they note that as a stable government body responsible for a large area of land, Penn State is in a good position to plan for the long term, and avoid making decisions in reaction to short term influences and fluctuations. They also point out that they are able to readily provide financial and other information that a private firm may hold secret. But notes that a public forestry agency faces "additional risks of a political nature".

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4.4 AssiDoman Skog and Tra - Kalix Management Region (Sweden - SGS Qualifor Program)

AssiDoman is the largest producer of forest products in Sweden, and one of the largest in the world, and 51% owned by the Swedish government. The Kalix region, the second largest of AssiDoman's 8 regions, covers 1 149 000 ha, 778 000 ha of which is productive forest. It is managed primarily for the extraction of pine and spruce for sawlogs and pulp, approximately 775 000m^3 annually.

The assessment of this management region was done over 5 days in September 1997; a pre-assessment of the company's management plan, country-wide, had been done six months earlier. This certification was done according to SGS's forest certification program, accredited by FSC International, prior to the Swedish FSC draft being completed. This was done in parallel with their efforts to get certified under the ISO 14001 program.

The SGS certificate was issued in November 1997. No major corrective actions that would preclude certification were required. Fifteen minor corrective actions that needed to be addressed within one year of the certification were assessed.

The public summary document is 30 pages long, with the first 10 being a general overview of the company and the economic, social and biophysical setting that the company operates in, and the National FSC standards. This first section is essentially the same in the certification summaries of all 8 districts.

In general, the assessment of the FSC principles comes across as a fairly informal process. In many cases, a large number of the criteria that form a principle have either been omitted or slighted over as unimportant or inapplicable. For example, all of Principle 1 (Compliance with laws and long term commitment to FSC's Principles and Criteria) have been dealt with in two sentences. The first states that AssiDoman accepted the FSC's P&C in principle when signing up for certification, and the second only mentions that applicable laws are available on CD ROM (no mention of adherence to, or resolution of conflict with these: P1.1, 1.2, 1.3 and 1.4).

In terms of social standards and economic efficiency (P. 4 and 5), a number of the requirements have not been assessed or at least not mentioned by the summary. In terms of local employment requirements (4.1), it simply says that ADs hiring policy "neither favors nor discriminates against" locals. In terms of consultation and social impact assessment (4.4), it only says that adjacent property owners have been contacted "where possible" and "consideration given" to their wishes, with no mention of mechanisms for resolving grievances or providing compensation (P.4.5). There is no mention of economic diversification or local processing requirements (P.5.2, 5.4). Overall, the summary notes that social aspects of AssiDoman's forestry management plan are not well-defined, but that this is considered to be of "low importance" due to the "Swedish social structure".

There is also minimal reference to the consultation of indigenous people. Although it is noted that the Sami people's traditional rights of reindeer grazing and hunting represent a "major issue" for forestry in northern Sweden, there is no mention of the company having achieved "free and informed consent" (P. 3.1) from the groups that traditionally use the area. Consultation that did occur focused mainly on the seasonal use of the land, and not ownership. SGS noted in its assessment that greater uniformity in consultation

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procedure across all Assi Doman districts was needed, and that some issues raised by the Sami haven't been adequately addressed; these were expressed in two Minor Corrective Action Requests (CARs). Minor CARs have to be met within a year, while Major CARs preclude certification.

In terms of environmental standards, there are several key criteria which appear to have been interpreted and applied in a fairly loose manner. For example, for Criteria 6.2 (safeguards provided for rare, threatened and endangered species) , it only mentions that a list of red-listed (endangered) species present on the company's land is available, with inadequate information available as to how these species should be taken into consideration. Overall, set aside protection areas are set at 5%, and even this is described as a "target". There is no mention whether this reserved area is "representative".

While there is no specific mention of monitoring (FSC Principle 8), there is reference to an annual ecological audit performed by company personnel, the results of which are made public.

The style and content of this certification summary is consistent with, and representative of the other 7 Assi Doman certifications.

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5. COMPARISON BY CRITERIA

5.1 Environmental Criteria

Although there are many different criteria that concern the environment, this section will examine four particularly relevant ones: 6.1: environmental impact assessment, 6.3, maintenance of ecological function.6.6: use of chemicals, and 5.6, interpretation of "long term sustainability".

Criteria 6.1 requires that an assessment of the potential environmental impacts that an operation may have be conducted prior to commencement. The interpretation of this impact assessment requirement differs significantly across regions. Specifically, there is a high degree of variance in terms of the specificity of what is required in the assessment, and the flexibility of the wording. For example, in the Maritimes, both the impacts of timber and non-timber product harvesting are to be considered, and there is a heavy emphasis on having a good knowledge of the forest soil characteristics. It stipulates that an "adequate" inventory must exist of environmental values, but allows for the individual certifier to interpret what "adequate" means, and what characteristics to consider. This is consistent with other standards such as the UKWAS; although it requires that an assessment is done, it is described as a "brief appraisal", and only requires that potential impacts have been "considered" This contrasts with the current BC regional draft, which includes a extensive and specific list of what is required ("including but not limited to") in terms of assessment and inventories. The BC draft also requires that a "benchmark" of environmental quality be defined, in relation to pre-European contact era (~1850).

Criteria 6.3 concerns ecological function, requiring that it be maintained, enhanced or restored (including succession/ regeneration, genetic, species and ecosystem diversity and natural cycles affecting productivity). This criteria is key to Principle 6 and to the FSC standard in general. A number of different approaches have been taken by the various FSC standards/ draft standards.

In the Maritimes, for example, there are criteria to be applied to both the stand level and the landscape level, which apply mainly to large landowners. Interestingly, the Pacific Northwest Standard has decided to include a definition of primary and late successional forests in this section, with greater harvesting restrictions on these four defined forest types. In the GLSL region, the draft makes frequent reference to government (MNR) guidelines. They also list separate requirements for Crown versus private land in terms of protected areas being set aside.

In the BC draft, 6.3 criteria has been developed at length into 15 sub-criteria, with very specific requirements for each. For example, it requires that the range and composition of all historically naturally occurring species be maintained, and there are very specific requirements in relation to planting and natural regeneration. It also mentions stringent guidelines for site preparation, including limitations on brushing and weeding.

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Criteria 6.6 concerns the use of chemicals in the forest, such as pesticides and herbicides. This topic has received considerable attention, and it is interesting to see how the various regions have approached this topic. For example, in the UKWAS standard, they recognize that such chemicals form an intricate part of current forest management practices, and consequently allow for their use[3], albeit with additional considerations. In contrast, the Maritime standard does not allow the use of these substances, except for in the "very rare case" that it is needed to control an invasive exotic plant that threatens a native species and when there is no other alternative available. The GLSL draft is slightly more permissive, allowing pesticides to be used to control insect outbreaks, and herbicides to regenerate "silviculturally challenging" species. This criteria was not developed in the May 1999 BC draft.

In terms of what constitutes "long term sustainability" (criteria 5.6), the time horizon used by the various regions can be very different. In the Swedish FSC standard, it simply asserts that "felling levels shall be sustainable in the long term" without defining what this constitutes. In the GLSL draft, they have moved this section into 7.1.d (management plan), requiring a plan with a 20 year horizon, stating that the rate of annual harvest should be less than the incremental growth projected over this period of time. Similarly, the UKWAS also requires a 20 year planning horizon, with a policy ensuring that the long term potential of the forest is not jeopardized by the harvest level. However, it does note that on some occasions the rate of harvest will exceed the increment temporarily. The Pacific Northwest draft requires that "the rate and manner of harvest shall not result in progressive reductions of forest resource inventories below ecologically appropriate levels, based on an appropriate reference ecosystem type", with these inventories to be made every ten years. In contrast, in the British Columbia FSC draft, reference is made to a modeling plan of "at least 250 years" in outlook, using the precautionary approach, to be used in determining harvest levels.

5.2 Aboriginal Peoples Criteria

Principle 3 outlines the criteria relating to indigenous peoples rights. This section will compare how the various standards have dealt with the requirements of obtaining free and informed consent (3.1), maintenance of tenure and resource rights (3.2), protection of special sites (3.3), and compensation for use of traditional knowledge (3.4).

The FSC Internationals **Criteria 3.1** states that *"indigenous people shall control forest management on their lands and territories unless they delegate control with free and informed consent"*. The Swedish document does not mention this "free and informed consent" clause. It simply stipulates that ***consideration*** must have been given to the indigenous (Sami) people's reindeer husbandry carried on their land holdings, and even then only if the Swedish National Board of Physical Planning and Building has designated the area as a year-round or winter grazing area. Consultation requirements here defer to existing government regulations.

The UKWAS notes that the general public should be considered "indigenous" and consulted accordingly, but does not mention anything about achieving "free and informed consent". While the Maritimes standard requires that "*efforts have been made*" to secure participation of First Nations, it does not mention specific requirements for achieving "free and informed consent". In the GLSL region, this clause is present, but applied only to lands where title has been determined (a detailed appendix of these land is listed as an

[3] It should be noted that this criteria is to be revised within a year of the UKWAS being issued (by Oct 2000)

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appendix), and stipulates that indigenous people **who show an interest** must be offered *substantive avenues* for participation, and lists some examples of what this might entail.

The Pacific Northwest draft states that tribal peoples shall take a lead role in the management of forests on their land if they so desire, and that where rights are disputed, a mutually agreed upon arbitration process is in place. However, what constitutes "informed consent" is left open for interpretation. There are specific consultation requirements listed for when a First Nations group wishes to log "Type 1" (old growth/ primary) forest. An appendix is provided for information related to indigenous land tenure. The BC draft outlines four different examples of what can be considered "free and informed consent", **at least one of which** must be met to satisfy the criteria:

- The appropriate First Nation signs a **Treaty** or **Agreement in Principle**
- The appropriate First Nation signs an **Interim Measures Agreement** on Forest Management and Natural Resources
- A **Co-Management Agreement** is established between the province, private land owner or manger
- The leadership of the First Nation **formally consents, in writing**, to allow forestry operations to take place in their traditional territory

Criteria 3.2 states that management shall not diminish the resources or tenure rights of indigenous peoples. The Swedish standard only mentions the specific requirements of the reindeer that the indigenous people herd, in particular the arboreal lichens upon which they depend as a food source (this criteria is combined with 3.3, protection of special sites). Most of the other standards and drafts examined here have used a wider interpretation, considering the indigenous peoples use of the land and all its resources. The GLSL draft allows for a jointly developed grievance resolution process to be established in the event that there is a dispute over aboriginal rights. The Maritimes standard mainly concerns the involvement in the forest management process, and ensuring that they receive employment opportunities when operations occur in their area.

The BC draft includes in this criteria specific requirements for research and inventories to be done with the full participation of the appropriate First Nations ("including but not limited to" a list of issues including cultural values, environmental impact assessment, monitoring etc.). It also states that no forestry is to be carried out in areas designated as "protected areas" by First Nations, and that compensation must be paid to the affected First Nations in the event that their traditional territory or resources are adversely affected by forestry operations.

Criteria 3.3 requires that sites of special cultural, ecological, economic or religious significance to indigenous people be identified and protected by forest mangers, in consultation with the affected groups. The Swedish standard requires that sites of special significance to Sami people be *"taken into consideration"* in forest management planning, but there are no prescriptions for protecting these sites. The GLSL draft requires that local first nations have been given the chance to identify special sites and that these sites have been addressed in the planning process and in the management plan itself. The BC draft is considerably more prescriptive as to which areas are to be considered "special", and states that sites whose existence and significance are based on oral traditions/ evidence are to be considered as well as those documented with physical evidence. These sites are to be protected to the satisfaction of the First Nation in question. The Maritimes version of this criteria is similar, except that there is no list of specific types of sites to be considered, and there is no mention of government funding.

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Criteria 3.4 requires that indigenous peoples shall be compensated for the application of their use of Traditional Ecological Knowledge (TEK) to forestry management. The majority of the drafts here have taken a very straightforward approach in interpreting this criteria. The Maritimes, GLSL and PNW drafts do not elaborate much beyond the FSC International principle, simply stipulating that indigenous groups are compensated fairly (agreed upon by both parties), if and when their TEK is used. This criteria has been omitted altogether from the UKWAS and Swedish standard. For this criteria, the BC draft has taken a fundamentally different approach to the interpretation. It states that TEK must be incorporated into all aspects of forest planning and management, in addition to requiring compensation for the use of it. This is not indicated by the FSC International criteria, which only requires that compensation be provided *if* this knowledge is used.

Overall, it appears that the current BC draft presents a more stringent standard for Principle 3 than for the other five standards examined here. This may reflect the increased complexity of aboriginal issues in the province. However, many of the requirements included here are independent of this, and make the standard more onerous.

5.3 Social and Economic Criteria

The social and economic criteria fall under Principle 4 and 5 of the FSC International standard, with 5 and 6 sub-criteria respectively. Overall, there is a great deal of disparity between the various standards/ drafts concerning length and number of criteria for these two sections. For example, the BC standard is 9 pages long and consists of 61 criteria (in addition to preamble, side notes, etc). This contrasts with standards such as the UKWAS (the equivalent sections 7 and 8, which are supposed to also cover Principle 3, consist of only 15 mandatory sub-criteria) and the Swedish FSC (the sections concerning social and economic standards amount to under two pages).

This section will examine how the various standards and drafts have approached four of these sub-criteria: community consultation and commitment (4.4), provision of local employment (4.1), optimal use and local processing requirements (5.2), and economic diversification requirements (5.4).

Consultation of the public and assessment of the social impact that an operation has on an area (4.4) is an integral component of the FSC's standard. The Maritimes and GLSL regions have developed this section in very similar ways; they both require that employees be given the chance to take part in management decisions and policy formation, and that public feedback is solicited and considered prior to the commencement of the activity. The Maritimes goes on to stipulate that the manager must take part in other sustainable management activities within the region, and that landowners within 500m of the operations be given 60 days advance notice. The Pacific Northwest (PNW) draft requires that managers shall provide information relating to social impact and give potential examples. It also lists groups and people that should be considered in this analysis. The UKWAS does not include these requirements, but defers to existing government requirements for public consultation. In addition, it notes that particular attention should be given to "high impact" operations. Where more prescriptive requirements such as these are noted, they are non-mandatory and for guidance only. Finally, in the Swedish standard, there isn't any mention of public consultation or social impact assessment being required at all; while it does say that the manager shall "ensure the long term social and economic well being" of the community, it does not direct how they are to do this or how to assess whether success has been achieved.

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In the development of criteria for local employment (4.1) and local processing (5.2/ 5.4) there is a significant difference between standards in both length and degree of prescriptiveness. The PNW draft states that managers "are *encouraged* to" hire locally, and should use local processing facilities "where *feasible*", allowing for a bit of leeway should this prove to be impractical. Similarly, GLSL requires that the forest manager *emphasizes* local hiring and purchasing, *encourages* value-added processing, and that local processing is *"investigated*, and pursued *if viable"*. Both this and the Maritimes standard contain an emphasis on the development of NTFPs and "under-utilized species". The wording of these criteria in the Swedish FSC is fairly brief; saying that employees should be offered long-term, secure employment, and that they should "make the best use" of the wood. There is no mention of local processing or hiring, and no indicators have been developed surrounding the optimal use of wood (7.2.9). The UKWAS, in comparison, has a much more simplified requirement, with one sub-criteria listed to cover all of 4.1, 5.2 and 5.4: "owners/ managers promote the integration of woodlands/ forests into the local economy" (7.3.1). The (non-binding) means of verification for this criteria state that "reasonable provision" has been provided for local employment, and that strengthening and diversifying the local economy is "promoted or encouraged". Small (under 100ha) woodlot owners that live on or adjacent to the harvest site are exempted from even this, as they are considered to be automatically integrated into the local economy.

In comparison to these other standards, the BC FSC draft interpretation of these criteria stands out as significantly lengthier and more detailed. Where other standards have used the terms "encouraged to" or "where feasible..." , the BC draft uses rigid terminology such as "shall" and "will". For example. "at every opportunity managers will use locally owned businesses...", managers will give locals preference in hiring and contracting". It requires that the company assists in developing local capacity for processing where it does not exist, or is inadequate. It also requires that the manager be capable of maintaining continuous employment, an onerous requirement in an industry subject to fluctuations and seasonal variation. These more rigid criteria may reduce the individual managers ability to make informed judgment decisions based on site-specific conditions.

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6. CONCLUSION

Presented here has been but a small sample of the current status and comparative nature of certification systems around the world, criteria within those systems, and actual certifications done according to those systems. As new drafts are developed, this report may soon need to be updated. However, hopefully it has highlighted potential sources of differences to be aware of as certification systems evolve in various regions of the world.

There are currently substantial discrepancies between drafts and established standards under the FSC system, some which may not be able to be reconciled through simple phrasing changes. The dilemma is this: these standards have been developed through a multi-stakeholder approach, and thus the flavour and stringency of each document will be guided in large part by the composition of each steering committee and standards development team. To ask one region to "harmonize up" or "harmonize down" their standard could be a formidable request unless it is simply a matter of format or syntax.

The development of certification systems is by nature an iterative process, continually adapting to incorporate new information. It is for this reason that research such as is presented here is an important and worthwhile exercise, to ensure that standards within a system are internally consistent, and that people are aware of initiatives being carried out by other bodies. In this way stakeholders and standards developers will be made aware of the context within which their particular regional standard is being developed, and aid in establishing an equitable bar to be met by all regions.

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Appendix A:

ACRONYMS

AF&PA:	American Forest and Paper Association
FFCS:	Finnish Forestry Certification System
FSC:	Forestry Stewardship Council
GLSL:	Great Lakes St. Lawrence (regional standard)
MRSC:	Maritimes Regional Steering Committee
MTE:	Menominee Tribal Enterprises
PEFC:	Pan European Forestry Certification
PNW:	Pacific Northwest (regional standard)
SFI:	Sustainable Forestry Initiative (AF&PA)
TEK:	Traditional Ecological Knowledge
TSWC:	Technical Standards Writing Committee
UKWAS	United Kingdom Woodland Assurance Scheme
WWF	World Wildlife Fund

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Appendix B:

STATUS OF STANDARDS DEVELOPMENT (APRIL 2000)

Standard	Status	Last draft issued/ Standard Approved on...
FSC- Sweden	**Approved**	June 1997
UKWAS	**Approved**	October 1999
FSC- USA-PNW	Draft 3.01	February 2000
GLSL	Draft	March 2000
Maritimes	Pending Approval	December 1999
Finland FFCS	**Approved**	November 1999
PEFC	Ongoing/ framework	Launched June 1999
AF&PA SFI	**Approved**	1996

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Appendix C:

COMPARATIVE MATRIX OF FSC CRITERIA ACROSS FOUR REGIONS

Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
PRINCIPLE # 1: COMPLIANCE WITH LAWS AND FSC PRINCIPLES **Forest management shall respect all national and local laws of the country in which they occur, and international treaties and agreements to which the country is signatory, and comply with FSC Principles and Criteria** •				
1.1 Management respects local + national laws	• training of staff required • satisfactory record of compliance required (1.1d,e) • standard operating procedure developed • corrective action: involves remedial measures for specific incident, and revisions to standard operating procedure	• no mention of previous compliance record or staff training (3.1.1)	• mentions First Nations treaties • no description of what constitutes "corrective action" • interviews with local officials	• no staff training required • no description of what constitutes "corrective action"
1.2 All fees, taxes paid		• not mentioned	• no mention of payments being "up to date" or made in a "timely manner", just "in good standing"	• info made up to date and accessible • provisions made to meet the costs of future charges
1.3 Binding international agreement respected	• list of req.'s and international agreements updated regularly • must comply with both **spirit** and **intent** of agreements • training of staff	• under 3.1.3		

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
1.4 Conflicts between laws and FSC Principles dealt with on a case-by-case basis	• "**perceived** conflicts shall be referred to FSC Implementation Committee for Interpretation"	• 3.1.4 (verbatim FSC Intl.)	• straightforward interpretation	• conflicts identified, documented, involved parties consulted/ informed, action taken to address it
1.5 Management areas protected from illegal harvesting, unauthorized activities	• identify agencies responsible for protection • allow for follow up, monitoring of protection	• not mentioned	• referred to under 1.4 • "should be protected" • surveillance requirement	• simply: protective action taken
1.6 Managers demonstrate long term commitment to FSC P&C	• policy of commitment to FSC made public • mgmt plan is on an "ecological time frame" • a written strategy showing that the manager is committed to moving all lands under her/his mgmt towards certification	3.1.2 • says "shall show commitment", • does not indicate what that requires	• referred to under 1.5 • manager makes a declaration of intention for the length of the plan • all operations ***within GLSL region*** required to move towards FSC certification	• 1-page declaration of commitment • all lands certified, or moving towards certification within 4 years of first cert. • long term management defined as 100 years
PRINCIPLE# 2: TENURE AND USE RIGHTS AND RESPONSIBILITIES • **Long term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.**				
2.1 Clear long term tenure and land use demonstrated	• documentation must be provided • any boundary changes requires a review of the plan • volume based tenure areas must be delineated/specified	• one paragraph for all of P2 • no mention of volume based operations	• dispute resolution mechanism is in place • status of disputes considered during certification • substantial disputes will normally disqualify the applicant • "contractual relationship b/w landowner and resource mngr"	• legal status of claims documented (First Nations/ mining/ trapline/ water, *easements*)

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
2.2 Local communities with legal or customary right have control over forest operations unless they willingly delegate control	• inventory of tenures and use (legal AND customary) • use of "well established" NTFPs permitted on public land, given "due consideration" on private land • "proactively consulted" • verbal/ written comments of *all those with interests* will be kept	• no mention of "free and informed consent" being necessary	• NTFP gathering sustained on a permissive basis, user fees permissible • de facto access • no mention of "free and informed consent"	• impact assessment requirement, including access mgmt • public access to related information guaranteed • free and informed consent given by affected stakeholders
2.3 Dispute resolution mechanism in place; presence of dispute may preclude certification	• previous and ongoing disputes documented • appropriate mechanism in place (LRMP, treaty process, etc.) • demonstrate cooperative relations with stakeholders • no "frivolous/ vexatious litigation"		• records exist and there is a "commitment to resolution"	• "documented evidence of commitment to resolve disputes" exists
PRINCIPLE# 3: INDIGENOUS PEOPLE'S RIGHTS The legal and customary rights of indigenous peoples to own, use and manage their territories and resources shall be recognized and respected.				
3.1 Indigenous people control forest mgmt on lands unless they delegate control with free and informed consent	• definition/ interpretation of "indigenous lands and territories" could be key • interim measures agreement in place where claims/ treaty • negotiations are ongoing • where there are competing claims, all parties must consent to forestry op.'s	• no mention of "free and informed consent"; simply: "gives **consideration** to Sami needs • reference to Forestry Act 20+31 (for consultation requirements)	• only lands where title has been determined are subject to "free and informed consent" clause • Appendix included for treaties and First Nations communities, Agreement in Principle or MOU must be secured	• "substantive" efforts done to encourage participation • decision making recognizes and respects Traditional Ecological Knowledge (TEK) • grievance resolving mechanism is in -place • no existing 1st Nations court challenges on land

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
3.2 **Forest mgmt shall not diminish resources or tenure rights of indigenous people**	• very specific consultation requirements, including during monitoring • no forestry in areas designated "protected" by First Nations • $$ paid in compensation where damage has already occurred • All staff must attend a workshop on First Nations values in forestry	• only mentions the need to protect and provide access to *arboreal lichens* and its dispersal/ successional patterns	• indigenous people must be offered ***substantive*** avenues for participation • where a dispute develops, process for resolving it will be agreed upon by both parties • cooperation is *desirable*	• mainly concerns involvement
3.3 **Sites of special significance. Are identified and described, and protected**	• very specific and extensive list of sites that could potentially be considered "culturally important area" • First Nations must be given the opportunity to identify these sites in the management plan • identified sites must be protected to the satisfaction of First Nation in question • **FUNDING requested of the Provincial Gov't**	• sites of special significance to the Sami people "shall be taken into consideration" (e.g., work paddocks, calving places, arboreal lichen areas)	• straightforward	• same as BC, but no specific mention of examples of culturally significant sites, no mention of funding

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
3.4 Indigenous. Peoples compensated for use	• TEK must be incorporated into the management plan • Precautionary principle used in resolving discrepancies between TEK and science • compensation agreed to in advance • refusal to share TEK respected	NO MENTION	• FSC International wording	• NO DEVELOPMENT
PRINCIPLE #4: COMMUNITY RELATIONS AND WORKERS' RIGHTS Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.				

4.1 The communities within the mgmt area are given employment, training opportunities	• local employment and services must be used at every opportunity
	• "maximize local ***human*** employment"
	• provide access to NTF resources
	• contribution to public education
		• workers shall be offered long-term, secure conditions of employment
		• enterprise to produce competence development plans and employ only those competent in both envrt and production
			• continuous education of staff
			• local value added processing encouraged
			• promotion of community stability through:
			  • sponsorship of local events, teams
			  • encouraging employee involvement in the community
				• heavy emphasis on maintaining NTFP access to locals
				• support for community infrastructure, social programs
				• "demonstrated commitment" to locals
				• "affiliations" made locally, justified when done otherwise

4.2 Forest mgmt meets or exceeds all applicable health/ safety regulations for employees and their families	• continuous improvement of health/ safety conditions • if health/ safety issues conflict with mgmt objectives, must be resolved or activities halted	• enterprise is responsible for ensuring prevention of physical, mental and social ill-health • outdoor envrt shall not be given priority at the expense of the working environment • enterprise to offer appropriately-organized adaptation and rehabilitation services	• safety equipment adequate • all contractors have adequate health coverage • policy and procedures, safety audits, training program for staff • adequate liability insurance	NO DEVELOPMENT

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
4.3 Worker's right to organize and voluntarily negotiate with employers guaranteed	under development	• 4.1.1		
4.4 Mgmt planning shall incorporate social impact assessment, consultation maintained with affected parties	• draws upon LRMP's, LRUP's • opportunity to participate • 60 days notice to everyone within 500m, given time to express concerns	• 4.1.3: human resources, socio-economic economic reports **to be introduced at a later date**	(listed as 4.3) • mgmt minimizes "aesthetic externalities" • community notified through advertisement, given time to respond • public disclosure of plans required	• input solicited from public and taken into consideration • min 60 days notice to those within 500m, concerns to be addressed
4.5 Measures taken to avoid loss or damage of legal/customary rights (etc.) of local people; compensation mechanism if loss/ damage occurs	• compensation for negligence (managers/ employees) • efficient dispute resolution mechanism	• 4.3 • no mention of compensation/ compensation mechanism	• grievances resolved expeditiously	• adequate procedures documented and employed for resolving grievances • due diligence to prevent loss/ damage
PRINCIPLE # 5: BENEFITS FROM THE FOREST **Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.**				

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
5.1 Management aims at economic viability, while considering social & envrt "full cost"	6 pages • heavy emphasis on long term **ecological** sustainability • Volume based tenure noted as a significant barrier to certification • "full and true cost", CBA required	1 sentence • no mention of "full costs" • "management is carried out in long term economically viable form", "subsidies may be used"	2½ pages • harvest levels "not an *input* to, but an *output* from forest management" • **fair** stumpage rates • reinvestment stipulation	1 page • adequate resources available ($$) • efficient use of fossil fuel • fair stumpage prices
5.2 Encourage optimal use and local processing of wood	• heavy emphasis on local, value-added processing	• no mention of local processing being a requirement	• "efforts" made to process wood locally, no mention of what meets this requirement	• "highest and best use of trees"
5.3 Minimize waste, avoid damage to other resources	• problems with CWD requirement noted • onus placed on manager: leave sufficient organic material to ensure nutrient cycling, but do not waste wood	• one sentence: "make best use of the wood"	• trail protection required	• (6.3.5 conflicts with GLSL's 5.2: deadwood restored to natural patterns)
5.4 Strengthen and diversify local economy	• wood supply capable of supporting **continuous employment** • plans of management made explicit in terms of existing and potential diversification • **direct** (eg, guide outfitting) and **indirect** (eg, the film industry) benefits considered • full cost-benefit analysis according to APP 2	• "mgmt shall maintain or enhance the long term social and economic well being of forest workers and their communities"		• must be aware of NTFP opportunities • "under-utilized" species identified, and markets sought

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
5.5 Maintain other forest resources such as watersheds, fisheries	• "Visual Resources" *plan* a requirement • recreational values	• emphasis on hunting, recreational access, berry picking	• internalize externalities (described in App. B-VIII)	• adaptive management, knowledge of ecology used • long list of non-timber benefits to be maintained (everything from climate regulation to cultural values, Appendix II) • internalize externalities • decrease reliance on subsidies
5.6 Rate of harvest is sustainable	• 250-year modeling used to project harvest • precautionary approach	7.2.1, 7.2.3 • subsidies may be used • says "should be sustainable" without describing details • reforestation methods described	• refers to criteria 7.1.d	• no mention of modeling or time scale to be used in determining sustainability
PRINCIPLE #6: ENVIRONMENTAL IMPACT **Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.**				
6.1 envrt. impact assessment done prior to operations	• use of FPC terminology: BEC, NDT, Site Series done • propose range of *desired future* stand conditions • detailed watershed analysis • management of *surrounding lands*, inventory required	not mentioned	• pre-cut assessment and prediction made • "adequate" inventory exists	• both timber and NTFP products considered • must demonstrate good knowledge of soil

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
6.2 Conservation of rare species and their habitat	• reserves, buffer width appropriate to size/ sensitivity of habitat • landowner participates in recovery plan	• only red list species considered; habitats demarcated with "proper consideration"	(LISTED UNDER 6.2.j) • *fine filter consideration* for particular species	• NO old growth logging, (overlap with P.9) • areas of ***unusually high diversity*** identified and protected
6.3 Ecological function is maintained or enhanced	• terminology: ***historical*** species range/composition maintained • early seral stages maintained, restrict weeding and brushing • **phrasing**: "appropriate to size and scale..." • **Onerous requirement: 6.3.b.3:** *maintain or restore naturally occurring species to viable population levels within their historic ranges of abundance and distribution*	• 5% of productive area exempt from operations (this in addition to area required to conserve natural diversity	(listed as 6.2) • delineates under "coarse" and "fine filter" approach • 7-20 large (>50cm DBH) trees retained/ ha • highgrading prohibited • clearcut= anything over 2X canopy height in length or width • >16 leave trees/ ha, >8 mast • old growth= >120yrs old	• delineated under stand level/ landscape level objectives • tree planting (as opposed to natural regen.) must be justified in a document • emulate natural coarse woody debris (CWD) patterns
6.4 Representative samples of ecosystems protected, recorded	• network of Protected Areas (PA's) to be established, up to 25% of region (according to Table 1; can include area already protected for other reasons) • open to low-impact activities	• >5% of region exempt from forestry, over and above what is required under other requirements • non-productive land exempt (<1m^3 of wood / ha/ year). • no mention of representativeness of protected area	6.2.e: • differentiates between standards for private and Crown lands	• must protect all *unique areas/ features*, provide "on the ground evidence" that this has been done • "*representative-ness*" is evaluated by peer-reviewed gap analysis of present PAs, and in consultation with WWF

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards

6.5
Written guidelines:
• **erosion control**
• **forest damage**
• **road construction**
• **water resources**
	19 sub-points, 4pg
	Breakdown:
	• **mass wasting**
	• **soil disturbance**
	  • (target of <5% of land, rehabilitation required)
	• **hydrological features**
	  • 3 alternatives for riparian management identified, v. detailed
		6.3 *Water*
		6.4 *Soil*
		• no new ditches created
		• NO MENTION OF RIPARIAN RESERVES
		• "maintain natural processes of forest soil": low level of detail on implementation
		• use of nitrogen for fertilization restricted
			6.3 (4 pages, 5pts)
			• very specific requirements to abide by (major tree stem damage, skid trail and landing specifications, etc.)
				• no specific #'s given
				• simply "*minimize*" road construction and impact

6.6 **Pest management guidelines**	NO DEVELOPMENT	• only mention- 6.8.2- nurseries should attempt to minimize pesticide use	• *strive* to avoid use of chemicals, herbicides used only in "challenging" regeneration problems • no aerial spraying, or use of chemicals within 10m of water, or when there is any risk of contamination (raining, etc) • target-specific pest. and herb. use allowed on exotics	• synthetics, biocide only to be used to restore natural forests (must receive approval from technical committee)
6.7 **Disposal of "special wastes"**	NO DEVELOPMENT		• biodegradable oil used when available	• biodegradable oil used when possible • recycling, waste reduction policy in place

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Principle	BC Interim Draft Standard	Sweden - FSC Standard	Great Lakes/ St. Lawrence	Maritimes - 4th Draft Standards
6.8 Use of biological control agents documented, minimized; no genetically engineered organisms	NO DEVELOPMENT		• bio control documented and minimized • gen. modified organisms prohibited ***except for the re-establishment of native species***	• gen. modified. Organisms not to include those developed through "classic breeding programs"
6.9 Use of exotic species controlled/ monitored	• 2 alts being considered, both involve phasing out use of exotics • "exotics" needs concrete definition	6.5.9: exotics used only in exceptional cases, needs consensus approval from FSC Sweden	6.6.a • not allowed except when used to control other non-native species	• exotics "must be considered negative", but can be used if they are proved to be compatible with mgmt objectives
6.10 Conversion to plantation forestry shall not occur except...	(detail in TABLE 2) • need "documented proof of the substantial long term conservation benefits enabled by such conversions	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED
PRINCIPLE #7: MANAGEMENT PLAN **A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.**				
7.1 The management plan and supporting documents shall provide these basic requirements:				
a objectives	• social, community "impact objectives" (i.e., envrtl, socioeconomic values) established	(management addressed in Appendix 2)	• NTFP, biodiversity values emphasized • historical/cultural resources considered	• lists objectives, predicted strengths/ weaknesses of mgmt unit in achieving these • communicates these objectives to the public
b mgmt area profile	• includes all results from envrtl assessments and discussion of risks • 7.1.b.2 "relevant factors" very lengthy	6.2.1b, 6.7.3	• historical ownership • mgmt goals/strategies to achieve these goals • inventory/ description of resource given	• area adequately mapped to make mgmt decisions • detailed history of mgmt area

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c description of silviculture, etc.	• access mgmt strategy, schedule for road construction, timber and NTFP harvesting • both stand and landscape-unit plans established • silvicultural system to achieve stand objectives documented • strategies for use of biological agents	(not addressed)	• desired future stand condition considered • "an understanding of stand dynamics: • "an understanding of ecological place and value" of trees, CWD, etc.	• v. General: document strategies/ prescription to meet objectives of long term forest sustainability • if area is < 500ha, must initiate a Landscape Unit plan; if less than 500 ha, must participate in Landscape Planning when opportunity arises
d rationale for rate of harvest/ sp. Selection	• details of estimation, including assumptions about potential variation in harvest level	(not addressed)	• justified by historical data and research • calculated net of protected non-productive land (protected areas, etc.)	• 7.1.b: harvest level < actual commercial land • present and evaluate market info* • predicted influence from pathogens, pests, etc.*
e provisions for monitoring	• refers to P. 8 • describe how results are incorporated into next plan	(see P. 8)	• "mgmt plan shall be revised periodically in response to new inf." • progress indicators identified	• must include a detailed plan for monitoring
f environmental safeguards	• plan shall include "strategy and techniques" to protect range of envrtl values within area + downstream and surrounding area	(not specifically addressed)	• (7.1.e) • considers potential future pests, droughts • written guidelines to avoid envrtl damage	• same as GLSL, + consideration of "greater landscape" in context of individual stands
g protection plans for rare species	• describe inventory methodologies and results • strategies and techniques employed to protect these species are described, when they are present in the mgmt area	(not specifically addressed)	• 7.1.c • procedures for identifying and safeguarding these species and their habitat identified	• plan must be included in accordance with 6.2

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h maps for mgmt purposes	• appropriate scale, of mgmt area and surroundings • past, present and future conditions • min. Req.'s: very detailed and prescriptive	6.2.1b, 6.7.3	• schedule of access and maintenance required (i.e., infrastructure and road work, values mapped, planned mgmt activities, etc.)	• site of cultural/ medicinal importance identified, marked on map • adequate detail for mgmt decision to be made
i description and justification for harvesting techniques	• rational described in terms of meeting standard landscape unit objectives	(not addressed)	• no specific mention of having to justify harvesting technique	• 7.1.7: access and harvest schedule, techniques justified
7.2 Management plan adapts to changing conditions, incorporates results of periodic monitoring.	• plan revised no longer than every 5 yr. • accommodate new information • progress indicators tracked • natural disturbances noted • monitoring results specific to HVCF	(not addressed)	• from FSC international	• adapted at least every 5 years
7.3 Forest workers shall be adequately trained to implement the plan	• training ensures consistent and reliable implementation • training educates workers in latest concepts and practices	• no mention of training specific to management plan	• NO MENTION	• sufficient to ensure "proper and efficient" implementation • maintain currency with FSC P & C

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7.4
While respecting confidentiality, managers shall make publicly available a summary of the plan.
	• solicit public input, with original plan plus on each subsequent revision
	• rationalize the acceptance or rejection of this input
		• mgmt plan every 5 years + initial documentation
		• specific section (App 2.4) of details of the plan that DO NOT need to be made publicly known, including:
		  • productive area
		  • growing stock(m3)
		  • site quality
		  • annual increment
			• mgmt plan and certification summary publicly available:	• only "made available"; no public input solicitation required

PRINCIPLE #8: MONITORING AND ASSESSMENT **Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.**				
8.1 **Monitoring suitable to operation and envrt, consistent over time**	• pre, during and post-work monitoring implemented, **including off-site impacts** • when new values discovered, work is stopped and plan is re-assessed • monitoring frequency guided by many factors listed, including **stakeholder concern**	For all of Principle 8 (7.2.9): "The condition of the forest, its development and the quality of measures shall be **followed up.**"		• fairly straightforward interpretation (like SGS)

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8.2 Monitoring requirements (yield, growth, composition, impacts, operational economics)	• 8d, e: list of specific types of monitoring appropriate for eco, socio-impact; very detailed and descriptive		• verbatim FSC principle	• straightforward interpretation
8.3 "Chain of Custody" documentation	• stipulates that product must be stamped before leaving mgmt area		• there is a documented procedure for identifying all products leaving the forest so that the recipient can determine the forest of origin	• documentation shall be provided
8.4 Results of monitoring incorporated in plan revision	• results analyzed, summarized • deficiencies identified • results used to modify (need revisions schedule of implementation) • discrepancies identified: predicted vs. realized performance			
8.5 Summary of monitoring results made public	• information released, public feedback solicited and taken in to account in next plan		• at least every ten years summary made available	• no mention of requirement to solicit public feedback or incorporate this into next plan
PRINCIPLE # 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS **Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.** •				

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9.1 Assessment to determine the presence of HCVF will be completed	• elaborate definition, in early stage of development (HCVF)
	• preliminary assessment to be conducted to assess presence of HCVF, including:
	  • gap analysis of PAS
	  • rare sp./ habitats
	  • uninterrupted natural ranges
	• consultation
		• 5.X: Montane forest
		• no specific requirements for pre-assessment (implicit: "areas of virgin-type forest are exempt from forestry measures)
			• NO DEVELOPMENT OF PRINCIPLE 9	• "there is documentation that an assessment has been carried out", no mention of what that assessment is to include

9.2 Consultation must emphasize the identified conservation attributes	• adequate participation by:
	  • all parties directly affected by proposed plan
	  • appropriate technical authorities
	  • local advocate groups with interest in HCVF area
		• no specific consultation requirement		• "there is evidence that during cert. process emphasis has been placed on identified conservation attributes"

9.3 The mgmt plan shall include measures to ensure conservation using the precautionary approach/ measures made public	• risk assessment required:
	  • background risk level
	  • potential impact
	  • options for reducing this impact
		• no specific mention of public information dissemination or "precautionary approach"		• "there is documented evidence that..."

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9.4 Annual monitoring done to assess if the measures employed are achieving their conservation objectives	monitoring appropriate to level of risk, scale and intensity of human disturbance	• No mention of monitoring		• there is evidence of annual monitoring
PRINCIPLE # 10: PLANTATIONS **Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.**				
10.1 Mgmt objectives of the plantation explicitly stated and demonstrated	• consistent with landscape unit objectives, natural forest conservation		no development	• prohibition of natural forest being turned into plantation
10.2 Plantation should protect, restore and conserve natural forests. Plantation should maintain wildlife corridors, streamside zones etc.	• cooperation with neighboring managers has been sought			• implementation of restoration plan must be consistent • natural regeneration should be encouraged w/n boundaries

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10.3 Plantation composition diversity that enhances economic ecological and social stability is encouraged/ preferred	• no mention of social stability being enhanced			• appropriate "microsite" selection for species selection and spacing requirements

10.4 Plantation species shall be based on site suitability/ management objectives; use native sp. unless exotics perform better and can be carefully monitored.	• preference always given to native sp., unless exotics will "substantially outperform" natives and demonstrate low-risk (i.e., infestation/ disease)
	• measures to prevent exotics spreading beyond plantation boundaries
				• Mgmt indicates that using exotics is negative from an ecological standpoint
				• demonstrates understanding of the risks that exotics carry and its role in restoration
				• mgmt to provide evidence that
				  • no invasion of surrounding area occurs
				  • ecosystem compatibility
				  • exotic planting limited to <5% of eco site

10.5 Part of the area shall be restored to natural cover.	• Retroactive restoration goal, specific #'s given in table • conservation assessment required to identify restoration areas and included in forest mgmt plan			• restoration plan exists, there is evidence of implementation

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10.6 Measures taken to improve soil structure, fertility and biol. activity, avoid adverse impact on natural hydrological attributes	• "as defined under the FPC" • specific monitoring requirements given			• "there is no evidence of adverse effects and alteration of watercourse"
10.7 Measures taken to minimize pest outbreak, fire, invasive plants, Integrated Pest Management (IPM) included in the plan, minimize/ phase out the use of chemicals, fertilizers	measures include (but not limited to): • natural windfirm-based cutblocks • suitable silviculture • ecologically appropriate species, etc. • "well timed and judicious" use of biol. Control, pesticides, fertilizers • monitoring for unintended damage			• "robust an well researched planting design" • restoration plan in place • plantation exhibits variation in age/height class, species and genetic diversity • no evidence of biocide/ synthetic chemical fertilizer use; otherwise appropriate authorization required
10.8 Regular social and ecological impact monitoring	• full harvest rotation length research trials (under 20 ha) must be completed before full implementation			• there are periodic assessments of onsite and offsite ecological impacts

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10.9 Plantations converted to plantations after 1994 will not qualify for certification; unless it can be proven that the manager/ owner is not responsible for such a conversion	No development			• there is no evidence that natural forests have been converted to plantation since Nov 1994

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About the Author

Peter Wood worked as an intern with the Trade and Sustainable Development Group of the BC Ministry of Employment and Investment between May 4th 1999 and March 31st 2000. In addition to researching and writing this comparative analysis, he was also involved in various aspects of certification issues across many different certification schemes and regions, monitoring international developments.

He graduated from UBC in Environmental Studies (Honours) in 1999 and has a broad interest in forestry, trade and development issues.